CLAIMS

1. (Currently amended) A method of alloying ~~incorporating~~ a nanostructured chemical selected from the group consisting of POSS and POS into a fluoropolymer, comprising the step of compounding [[a]] the nanostructured chemical into the ~~polymer~~ fluoropolymer.

2. (Currently amended) A method according to claim 1, wherein a ~~mix of different~~ plurality of nanostructured chemicals is compounded into the polymer.

3. (Original) A method according to claim 1, wherein the fluoropolymer is in a physical state selected from the group consisting of oils, amorphous, semicrystalline, crystalline, elastomeric and rubber.

4. (Original) A method according to claim 1, wherein the fluoropolymer contains a chemical sequence and related polymer microstructure.

5. (Currently amended) A method according to claim 1, wherein the ~~polymer~~ fluoropolymer is a polymer coil, a polymer domain, a polymer chain, a polymer segment, or mixtures thereof.

6. (Original) A method according to claim 1, wherein the nanostructured chemical reinforces the fluoropolymer at a molecular level.

7. (Original) A method according to claim 1, wherein the compounding is nonreactive.

8. (Original) A method according to claim 1, wherein the compounding is reactive.

9. (Currently amended) A method according to claim 1, wherein a physical property of the fluoropolymer is improved as a result of incorporating the nanostructured chemical into the ~~polymer~~ fluoropolymer.

10. (Currently amended) A method according to claim 9, wherein the physical property ~~comprises a member~~ is selected from the group consisting of adhesion to a polymeric surface, adhesion to a composite surface, adhesion to a metal surface, water repellency, density, low dielectric constant, thermal conductivity, glass transition, viscosity, melt transition, storage modulus, relaxation, stress transfer, abrasion resistance, fire resistance, biological compatibility, gas permeability, porosity, and optical quality.

11. (Currently amended) A method according to claim 1, wherein the compounding step is accomplished by blending the nanostructured chemical into the ~~polymer~~ fluoropolymer.

12. (Currently amended) A method according to claim [[1]] 11, wherein the compounding step is accomplished by a blending process selected from the group consisting of melt blending, dry blending, and solution blending.

13. (Original) A method according to claim 1, wherein the nanostructured chemical functions as a plasticizer.

14. (Original) A method according to claim 1, wherein the nanostructured chemical functions as a filler.

15. (Currently amended) A method according to claim 1, wherein the nanostructured chemical is selectively compounded into the ~~polymer~~ fluoropolymer such that the nanostructured chemical is incorporated into a predetermined region within the ~~polymer~~ fluoropolymer.

16. (Currently amended) A method according to claim 1, wherein ~~A method of controlling~~ the molecular motion of a ~~polymer,~~ fluoropolymer is controlled by ~~comprising~~ compounding [[a]] the nanostructured chemical into the ~~polymer~~ fluoropolymer.

17. (Currently amended) A method according to claim 16, wherein a time dependent property is enhanced as a result of compounding the nanostructured chemical into the ~~polymer~~ fluoropolymer.

18. (Original) A method according to claim 17, wherein the time dependent property is selected from the group consisting of T_g, HDT, modulus, creep, set, permeability, erosion resistance, abrasion resistance.

19. (Currently amended) A method according to claim 15, wherein ~~of reinforcing a selected region of a polymer, the method comprising: compounding a~~ the nanostructured chemical ~~with~~ has chemical properties compatible with the ~~selected~~ predetermined region of the ~~polymer~~ fluoropolymer, whereby the compounding reinforces the fluoropolymer.

20. (Cancelled)